

AMENDED IN ASSEMBLY MAY 27, 2011

AMENDED IN ASSEMBLY APRIL 25, 2011

AMENDED IN ASSEMBLY MARCH 31, 2011

CALIFORNIA LEGISLATURE—2011–12 REGULAR SESSION

ASSEMBLY BILL

No. 296

Introduced by Assembly Member Skinner
(Coauthors: Assembly Members Fletcher and Gordon)

February 9, 2011

An act to add Chapter 5 (commencing with Section 14457) to Part 5 of Division 3 of Title 2 of the Government Code, and to add Section 17929.18941.9 to the Health and Safety Code, relating to building standards.

LEGISLATIVE COUNSEL'S DIGEST

AB 296, as amended, Skinner. Building standards: cool pavement.

(1) Existing law requires the Department of Transportation to adopt a balanced, multimodal research and development program, including the research and development of new technologies.

This bill would establish the Cool Pavements Research and Implementation Act and would require the department, in consultation with specified state agencies, to implement the act. The bill would require the department to ~~adopt a strategy, through a public process, to implement the act and publish or make available on the department's Internet Web site, by January 1, 2015~~ 2014, ~~to adopt by regulation a Cool Pavements Handbook to detail specifications, testing protocols, standards, and best practices for cool pavements.~~

The bill would require the department to implement one or more cool pavement pilot projects, with the goal of completion of the pilot projects

no later than January 1, 2018, and to submit a report to the Legislature with an analysis of the various costs of pavement surfaces and the results of the cool pavement pilot projects.

(2) The California Building Standards Law requires any building standard adopted or proposed by a state agency to be submitted to, and approved or adopted by, the California Building Standards Commission prior to codification.

~~The State Housing Law requires the Department of Housing and Community Development to submit to the commission proposed building standards for hotels, motels, lodging houses, apartment houses, and dwellings.~~

This bill would require the ~~department~~ *commission*, in the next triennial adoption process of the California Green Building Code that begins on or after January 1, ~~2012~~ *2015*, to ~~propose building standards that authorize the use of cool pavements in the construction of any exterior paved surface in, or related to the construction of, a structure such as a patio, sidewalk, or driveway, or all or a portion of a dwelling unit, hotel, motel, or lodging house~~ *consider incorporating those specifications proposed in the Cool Pavements Handbook as additional strategies for Heat Island Effect: Hardscape Alternatives in the California Green Building Code.*

Vote: majority. Appropriation: no. Fiscal committee: yes.
State-mandated local program: no.

The people of the State of California do enact as follows:

- 1 SECTION 1. The Legislature finds and declares all of the
- 2 following:
- 3 (a) ~~The intent of this act is to create a comprehensive “cool~~
- 4 ~~pavements” program to address heat island effect (HIE), a~~
- 5 ~~phenomenon characterized by the temperature differential between~~
- 6 ~~developed and rural areas.~~
- 7 (a) *The heat island effect (HIE) is a phenomenon characterized*
- 8 *by the temperature differential between developed and rural areas.*
- 9 (b) The cause of the HIE is land modification in urban and
- 10 suburban areas, principally with impervious hardscape materials
- 11 that ~~retain~~ *absorb* more heat energy from the sun than do soil or
- 12 vegetative surfaces. ~~When this trapped heat reradiates to the~~
- 13 ~~surroundings, As a result, surrounding surface and air temperatures~~
- 14 become artificially elevated.

(c) Impervious *hardscape* cover is also a major contributor to stormwater runoff, leading to pollution and elevated water temperatures, which can pose problems for some aquatic life. runoff, contributing to water pollution and elevating water temperatures.

~~(d) This act aims to mitigate the HIE from paved hardscape surfaces, which may be done by switching to so-called cool pavements. The use of cool pavements reduces the localized HIE, providing some or all of the following benefits:~~

- ~~(1) Reduced ambient temperatures.~~
- ~~(2) Reduced formation of ground-level ozone or smog.~~
- ~~(3) Reduced stormwater runoff.~~
- ~~(4) Reduced wear from diurnal thermal stress.~~
- ~~(5) Indirectly reduced demand for electricity, and hence reduced emissions.~~

(d) The intent of this act is to have the Department of Transportation (Caltrans) publish statewide specifications and best practices for using “cool pavements” that reduce the HIE from sidewalks, roads, plazas, highways, parking lots, schoolyards, or any surface designed for vehicular or pedestrian use.

(e) The publication is meant to increase awareness of paving options that mitigate, rather than contribute to, the HIE and other impacts of impervious hardscape surfaces. Hardscape alternatives, also known as “cool pavements,” such as those with high solar reflectivity, provide one or more of the following benefits:

- (1) Reduced outdoor surface and air temperatures.*
- (2) Reduced formation of ground-level ozone or smog.*
- (3) Reduced wear from diurnal thermal stress.*
- (4) Indirectly reduced demand for electricity, and thereby reduced emissions.*
- (5) Reduced stormwater runoff.*

~~(e)~~
(f) Examples of cool pavements include, but are not limited to, high albedo pavements and coatings, vegetative surfaces, porous or pervious pavements that allow water infiltration, and shaded pavements.

~~(f) The program~~
(g) The specifications, testing protocols, and best practices established by this act should complement the voluntary nonresidential voluntary provision in the California Green Building

Standards Code on ~~HIE-reducing pavements~~ *Heat-Island-Effect: Hardscape Alternatives* (Section A5.106.11.1 of Appendix 5 of Part 11 (commencing with Section 101.1) of Title 24 of the California Code of Regulations), while expanding the allowable ways to meet the goals of that provision.

~~(g)~~
(h) This act provides for the development of a Cool Pavements Handbook by the Department of Transportation (Caltrans), in consultation with other relevant state agencies and ~~departments~~, to establish metrics, tests, benchmarks, and best practices for alternatives that mitigate the HIE of all traditional hardscape surfaces. ~~departments. The handbook is intended to be limited to a collection of existing specifications, testing protocols, and best practices for hardscape alternatives that reduce the effect specified in subdivision (b), relative to traditional hardscape surfaces.~~

(i) This act further provides for one or more cool pavement pilot projects to be developed and studied to evaluate the economic, environmental, and public health benefits of cool pavements.

SEC. 2. Chapter 5 (commencing with Section 14457) is added to Part 5 of Division 3 of Title 2 of the Government Code, to read:

CHAPTER 5. COOL PAVEMENTS RESEARCH AND
IMPLEMENTATION ACT

14457. For purposes of this chapter, the following definitions shall apply:

(a) “Cool pavement project” means a project that uses a ~~qualified~~ cool pavement ~~for the purposes of mitigating to reduce the heat island effect, and that meets the performance and use standards for HIE mitigation specified in the Cool Pavements Handbook adopted pursuant to Section 14460.~~ by meeting the criteria specified in the *Cool Pavements Handbook* published pursuant to Section 14459.

(b) “Heat island effect” or “HIE” means the temperature differential between developed and rural areas caused by impervious hardscape materials.

14458. (a) The department shall implement this chapter in consultation with the Department of General Services, the California Building Standards Commission, the State Water Resources Control Board, the State Energy Resources Conservation

1 and Development Commission, the State Air Resources Board,
2 the State Water Quality Control Board, and any other relevant state
3 department or agency.

4 (b) The department may enter into an agreement with the United
5 States Department of Transportation, *the United States*
6 *Environmental Protection Agency, the United States Department*
7 *of Energy, or other federal agencies*, to coordinate implementation
8 of Sections 14460 and 14461, ~~including exploring the goals and~~
9 ~~various costs of paving materials and techniques. of Sections 14459~~
10 ~~and 14460, including studying the environmental benefits, energy~~
11 ~~savings, life cycle, and durability of various pavement options.~~

12 (c) This chapter shall be known, and may be cited, as the Cool
13 Pavements Research and Implementation Act.

14 ~~14459. The department shall adopt a strategy, through a public~~
15 ~~process, to implement this chapter. This strategy shall identify the~~
16 ~~HHE-mitigating options for traditionally hardscape surfaces,~~
17 ~~including, but not limited to, sidewalks, roads, plazas, highways,~~
18 ~~parking lots, schoolyards, and any surface designed for vehicular~~
19 ~~or pedestrian use.~~

20 ~~14460. (a) On or before January 1, 2015, the department shall~~
21 ~~adopt, by regulation, a Cool Pavements Handbook, that details the~~
22 ~~testing protocols, standards, and best practices for cool pavement~~
23 ~~projects. The department shall consult and incorporate existing~~
24 ~~specifications, testing protocols, and best management practices~~
25 ~~in developing this handbook, when possible. The department shall~~
26 ~~assemble a team of stakeholders for determining specific tests and~~
27 ~~benchmarks to be used as qualifying metrics for cool pavement~~
28 ~~materials and surfaces.~~

29 ~~14459. (a) On or before January 1, 2014, the department~~
30 ~~shall, with input from other relevant agencies listed in subdivision~~
31 ~~(a) of Section 14458, publish or make available on its Internet~~
32 ~~Web site a Cool Pavements Handbook that incorporates existing~~
33 ~~specifications, testing protocols, and best practices, as appropriate,~~
34 ~~for cool pavement use.~~

35 (b) The Cool Pavements Handbook shall ~~require~~ identify a cool
36 pavement ~~project to do~~ paving material or technique that does one
37 or more of the following ~~to mitigate the HHE~~:

38 (1) ~~Reduce pavement from diurnal thermal stress.~~

39 (2) ~~Increase the albedo of the pavement to 0.5 or higher.~~

1 ~~(3) Reduce surface or air temperatures relative to traditional~~
2 ~~asphalt concrete.~~

3 *(1) Reduces surface temperature relative to traditional,*
4 *unshaded asphalt concrete.*

5 *(2) Has a light color or high albedo.*

6 *(3) Reduces diurnal thermal stress.*

7 ~~(4) Remove~~ *Removes* greenhouse gases through photocatalytic
8 processes.

9 ~~(5) Abate~~ *Reduces* stormwater runoff via increased water
10 infiltration to the underlying surface, including, but not limited to,
11 using porous ~~pavements, open grid, and vegetative surfaces.~~
12 *open-grid systems, vegetative surfaces, or bioswales.*

13 (c) The department may include, in the Cool Pavements
14 Handbook, any other material or technique found by the
15 departments to ~~mitigate the HIE~~ *reduce the HIE, ozone formation,*
16 *or stormwater runoff.*

17 *(d) The Cool Pavements Handbook shall include specifications*
18 *and best practices, where available, for sidewalks, roads, plazas,*
19 *highways, parking lots, schoolyards, or any surface designed for*
20 *vehicular or pedestrian use.*

21 ~~(d)~~

22 (e) The Cool Pavements Handbook shall be referenced in the
23 relevant sections of the department's Construction Manual and be
24 made available to the public.

25 ~~14461. (a) The department shall implement one or more cool~~
26 ~~pavement pilot projects, with the goal of completion of the pilot~~
27 ~~projects no later than January 1, 2018.~~

28 ~~(b) On or before January 1, 2018, the department shall submit~~
29 ~~a report, in compliance with Section 9795, to the Legislature with~~
30 ~~an analysis of the various costs of pavement surfaces and the results~~
31 ~~of the cool pavement pilot projects. The report shall focus on the~~
32 ~~life cycle and durability of various pavement options.~~

33 *14460. (a) The department shall implement one or more cool*
34 *pavement pilot projects, with the goal of completing construction*
35 *by January 1, 2015, and completing an analysis of the pilot projects*
36 *no later than January 1, 2018.*

37 *(b) On or before January 1, 2018, the department shall submit*
38 *a report to the Legislature in accordance with Section 9795. The*
39 *report shall include an analysis of the costs of using various*
40 *pavement surfaces and the results of the cool pavement pilot*

1 *projects. The report shall also include the environmental benefits,*
2 *energy savings, life cycle, and durability of various pavement*
3 *options.*

4 (c) The requirement for submitting a report imposed under
5 subdivision (b) is inoperative on January 1, 2022, pursuant to
6 Section 10231.5 of the Government Code.

7 ~~SEC. 3. Section 17929 is added to the Health and Safety Code,~~
8 ~~to read:~~

9 ~~17929. (a) For the purposes of this section, a “cool pavement”~~
10 ~~means an engineered pavement that meets the qualifications and~~
11 ~~use standards set out in the Cool Pavements Handbook, adopted~~
12 ~~pursuant to Chapter 5 (commencing with Section 14457) of Part~~
13 ~~5 of Division 3 of Title 2 of the Government Code.~~

14 ~~(b) In the next triennial adoption process of the California~~
15 ~~Building Code (Title 24 of the California Code of Regulations)~~
16 ~~that begins on or after January 1, 2012, the department shall~~
17 ~~propose building standards that authorize the use of cool pavements~~
18 ~~in the construction of any exterior paved surface in, or related to~~
19 ~~the construction of, a structure such as a patio, sidewalk, or~~
20 ~~driveway, or all or a portion of a dwelling unit, hotel, motel, or~~
21 ~~lodging house.~~

22 ~~SEC. 3. Section 18941.9 is added to the Health and Safety~~
23 ~~Code, to read:~~

24 ~~18941.9. The commission shall, in the next triennial adoption~~
25 ~~process for the code adopted after January 1, 2015, consider~~
26 ~~incorporating those specifications proposed pursuant to Section~~
27 ~~14459 of the Government Code as additional strategies for Heat~~
28 ~~Island Effect: Hardscape Alternatives in the California Green~~
29 ~~Building Standards Code (Section A5.106.11.1 of Appendix 5 of~~
30 ~~Part 11 (commencing with Section 101.1) of Title 24 of the~~
31 ~~California Code of Regulations).~~